

## EFFECTS OF CATALOGUING AND CLASSIFICATION SCHEMES ON THE ORGANIZATION OF KNOWLEDGE IN MEDICAL LIBRARIES

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### ABSTRACT

Medical Information resources are useless when access is not provided. This fundamental function is within the concept of cataloguing and classification. Thus, cataloguing and classification is an essential process that provides access to all acquired information resources of the medical libraries for it allows librarians to give details bibliographic description, subject analysis and assignment of classification notation to medical information resources. This paper focuses on the effects of the major three bibliographic and information retrieval tools and techniques used for medical information organization.

**These Tools Are:** Library of congress classification scheme (NLC), National library of Medicine classification scheme (NLMC) and Dewey decimal classification scheme (DDC).

**KEYWORDS:** Cataloguing, Classification Medicine, Schemes, Organization, Knowledge, Medical Libraries

### INTRODUCTION

The practice of medicine is professional, and the indices that make any occupation a profession emphasize systematic theoretical and practical education and training. It is in this respect that it becomes important that medical students are provided with an enabling environment for training and learning. The environment itself consists of factors such as physical and human facilities that should be made available to medical students as a matter of practice, and the students made to maximally utilize them for their professional training.

Most medical library learning resources are acquired to enable students and Faculty to be prepared for learning, teaching and research in accordance with the basic function of a tertiary institution Rankin (1992) identifies five basic functions of medical library collection is meant to serve these include: the education and training of health professional, administration of healthcare services, and education programmes. It is also meant to preserve institutional publications and related materials, training of staff and students and clinical practice and healthcare services.

Medical library collections include textbooks, bibliographic databases, journals, electronic texts, electronic journals, audio-visual tapes, CD-ROM and manikins, among others (Shershoneva, et al 2005). Mostly people in the field of medicine, dentistry, pharmacy, biomedical sciences, Nursing and Public Health use the medical library.

Medicine is an ever-evolving and information based discipline, and as such requires the provision of information needed to meet the information requirements of medical students and other members of health team, which have been

identified to include: information for studying course work. This type of information would equip them with the skills they need to practice up-to-date and evidence-based medicine which are essential to improving the quality of medical care (Ibrahim, et al, 2004). The materials needed to meet the students' information needs were to be found in lecture notes, hand-outs, textbooks, computerized indexes and other electronic resources like medicine and the internet (Ibegwam, 2003).

Two issues are crucial to efficiency of medical libraries; these issues are collection development and organization of the collection. Collection development involves selection and acquisition of information sources when translate into collections of a library. Collections of medical libraries are the bedrocks of all services they can offer and determinant of the extent to which such services can be provided. The collection must be reasonably good and diverse, such collections must include all the categories of information sources such as print and non-print form e.g. books, journals, computers, CD-ROM, charts, diagrams maps, references sources e.t.c.

The processes involved in organizing the resources acquired for the medical libraries are called cataloguing and classification.

Cataloguing and classification are core tenant of librarianship, has at its heart the goal of making library materials more accessible to the users. Cataloguing allow users to identify, select, find and obtain the appropriate resources that address their information needs, and the arrangement of the library catalogs is depending on the selection of classification scheme. Classification allows materials, to be collated with similar materials, which is usually accomplished subject classifications (Fricke 2012)

Medical information resources are useless when access is not provided. Thus, cataloguing is an essential process that provides access to all acquired information resources of the library for it allows people to find information needed for their personal and professional growth and development it also provides access points to information resources in a way that users will be able to find needed information or resources.

The element in cataloguing consists of bibliographic description, subject analysis and classification. Indeed, cataloguing is very important in keeping all materials in the library organized because it provides regularity with the library. The library through the cataloguing services provided, and delivers the most efficient and highest quality service so that library users may identify and retrieve appropriate materials to meet their information needs.

## **WHAT IS CATALOGUING**

Cataloguing is the process of creating entries for a catalogue in libraries, this usually includes bibliographic description i.e. (the authors name, the title and the date of publication, the published and place of publication, the edition, number of pages or volumes, height of the books in centimeters details of illustrations and some brief notes), subject analysis, assignment of classification notation, and activities involved in physically preparing the item for the shelf. This task usually performed under the supervision of a librarian trained as a cataloguer. (Johan, K. 2009)

There are two kinds of cataloguing i.e. original cataloguing and copy cataloguing. Original cataloguing is the preparation of a bibliographic record from the scratch, without the aid of pre-existing catalogue record for the same edition while copy cataloguing is the adaptation of pre-existing bibliographic record (usually found in OCLC, RLIN, NUC or some other bibliographic database) to fit the characteristics of the item in hand, with modification to correct obvious errors and minor adjustments to reflect locally accepted cataloguing practice, as distinct from original cataloguing.

The bibliographical details of materials in the medical libraries can be easily located through card catalogue or online catalogue. A card catalogue is a list of the holdings of a library, printed, typed or handwritten on a catalogue card(s), each representing a single bibliographic item in the collection. They are normally filed in a single alphabetical sequence or in a separate section by author, title and subject in the long narrow drawers of a specially designed filing cabinet, usually constructed of wood.

On the other hand online catalogue consisting of or a collection of a bibliographic records in machine-readable format, maintained on a dedicated computer that provides uninterrupted interactive access via terminals or workstations indirect, continuous communication with the central computer. Most online catalogue is searchable by author, title, subject heading and keywords.

The first step in cataloguing is descriptive which is done by allocating access points to the document. This entails the description of the essential parts of the publication such as the person or body responsible for the work, title, pagination, publisher, place of publication, edition and series note. Several codes or rules have emerged using some parameters to denote a document in the catalogue. But the most popular code which is used all over the world is the Anglo-American Cataloguing Rules 2 (AACR2) (2005). The code describes rules for each of the activities involved in cataloguing (sequence, punctuation, indentation, capitalization etc).

The second step in cataloguing is assigning a subject to the document. To do this one must first decide what the document is about (intellectual or subject content). The document must be examined carefully to get the required information from the title, sub-title, covers, jacket description, contents page, references and existing catalogue cards. Concepts which best describe the subject and which a user is most likely to search should be identified. Then a tool called Subject Headings should now be consulted to find suitable and appropriate uniform headings which use alphabetical, structured controlled language and cross-referencing of related terms. The Library of Congress Subject Headings which are based on Cutter's Rules for a dictionary catalogue and Sears List of Subject Headings have been the most influential and popular ones

## **PURPOSE/GOAL OF CATALOGUING IN MEDICAL LIBRARIES**

According to Johan Koren (2009), the goals of cataloguing are:-

To enable a person/patron to find, identify, select and obtain.

To enable a person/patron/user to find a book of which either, the author, the title, or the subject is known.

To show what the library has by a given author on a given subject in a given literature.

To assist in the choice of a book as to its edition, (bibliographically) as to its character (literary or topical).

## **CLASSIFICATION OF MEDICAL LIBRARY RESOURCES**

Amusa, I.O. and Iyoro, A.O. (2003) described classification as "The systematic arrangement of library collections on the shelves. All documents on a subject and are related ones are brought together from the general to the specific".

Also, classification deals with assigning codes or notation representing the subject of an information sources. The codes or notations are called "call number or class number". It deals with determination of the subject of an information source and allocation of notation by which that information is shelved in the medical libraries.

## CLASSIFICATION SCHEMES IN MEDICAL LIBRARIES

Classification schemes are the main tool in classifying information sources in the medical libraries. They are publications containing systematically listed terms or notations representing discipline and sub disciplines. They aim at assisting librarians to organize library resources and the users in locating desire information sources easily and quickly.

A typical classification scheme is in three parts, i.e. schedule, notation, and index. The schedule contains the list of all main classes and sub-classes of the scheme. The notation is a sign or symbol in a definite order representing disciplines and subjects listed in the schedule, and the index is an alphabetical list of subject terms in the schedule with their corresponding notation. Index provides quick access to the schedule.

Classification facilitates the following in a typical medical library.

- Purposeful arrangement and retrieval of information sources
- Proper replacement of consulted information sources on the shelves
- Display of information sources on different disciplines at a glance

There are several classification schemes in use worldwide, but I would like to discuss on three popular ones among them for classification of medical libraries resources. These are:

- National library of medicine classification scheme (NLMC)
- Library of congress-classification scheme (LC)
- Dewey Decimal classification (DDC)

### NATIONAL LIBRARY OF MEDINE CLASSIFICATION SCHEME (NLMC)

The National Library of Medicine Classification Scheme (NLMC) is the most commonly used classification scheme by medical libraries because it is the most appropriate for a medical collection as it is highly detailed and provides the best coverage for the specific subject area.

The scheme was developed in 1948 by Mary Louise Mashall. The NLMC acts to supplement the library of congress classification by permanently excluding schedules QS-QZ and W-WZ (Womack 2008). These two divisions are designated as (Preclinical Sciences) and (Medicine and Related Subjects) respectively, which are subdivided hierarchically based on the sequence of study in the medical school curriculum (Lopez-Mertz 1997). This subject arrangement therefore is most appropriate for library catering specifically to medical professionals.

### OUTLINES OF NLMC SCHEDULES

#### Outline of Schedules

##### Preclinical Sciences

- |    |               |
|----|---------------|
| QS | Human Anatomy |
| QT | Physiology    |

QU	Biochemistry
QV	Pharmacology
QW	Microbiology and Immunology
QX	Parasitology
QY	Clinical Pathology
QZ	Pathology

#### **MEDICINE AND RELATED SUBJECTS**

W	Health Professions
WA	Public Health
WB	Practice of Medicine
WC	Communicable Diseases
WD 100	Nutrition Disorders
WD 200	Metabolic Diseases
WD 300	Immunologic and Collagen Diseases. Hypersensitivity
WD 400	Animal Poisons
WD 500	Plant Poisons
WD 600	Diseases and Injuries Caused by Physical Agents
WD 700	Aviation and Space Medicine
WE	Musculoskeletal System
WF	Respiratory System
WG	Cardiovascular System
WH	Hemic and Lymphatic Systems
WI	Digestive System
WJ	Urogenital System
WK	Endocrine System
WL	Nervous System
WM	Psychiatry
WN	Radiology. Diagnostic Imaging
WO	Surgery

WP	Gynecology
WQ	Obstetrics
WR	Dermatology
WS	Pediatrics
WT	Geriatrics. Chronic Disease
WU	Dentistry. Oral Surgery
WV	Otolaryngology
WW	Ophthalmology
WX	Hospitals and other Health Facilities
WY	Nursing
WZ	History of Medicine
19 <sup>th</sup> Century Schedule	

## DEWEY DECIMAL CLASSIFICATION SCHEMES

This scheme was developed by the American Librarian Melvil Dewey in 1873. DDC is structured hierarchically; it proceeds from the general to the specific. It arranges knowledge into 10 broad classes. Each main class is divided into 10 divisions, and each division is further divided into 10 sub-divisions until all the subject terms have been specified. Arrangement of classes in DDC is based on disciplines rather than subjects (Amusa, O. I & Iyoro A. O. 2011)

DDC TREATED MEDICINE AND Health as a division in the Science and Technology it provides class mark of 610-618. However, for consumer health, the DDC may be more appropriate as it is likely more familiar for patrons who use public libraries. DDC is a much older system, and it has been expanded greatly and the original ten main classes remain.

The main features of DDC are:

The use of pure Arabic numerals in notation.

The use of decimal to specify subject terms that is specific. Arabic numerals and decimal allow indefinite expansion of the classes.

The scheme is compact. It is available in four volumes.

Availability of relative index to the diverse materials in the schedule.

### Medicine and Health

Standard subdivisions are added for medicine and health together, for medicine alone

Class here technology of medical services

Class social welfare problems of and services to persons with physical illness, interdisciplinary works on social provision of medical services and technology of medical services in 362.1: class home care by nonprofessionals of persons with illnesses and disabilities in 649.8

## SUMMARY

610.1-9 (Standard subdivisions, medical personnel, nursing)

611 Human anatomy, cytology, histology

001-009 Standard subdivisions

01 Anatomic embryology, cytology, histology

1 Cardiovascular organs

2 Respiratory organs

3 Digestive tract organs

4 Hematopoietic, lymphatic, glandular systems

6 Urogenital system

7 Musculoskeletal system, integument

8 Nervous system, Sense organs

9 Regional and topographical anatomy

612 Human physiology

001-009 Standard Subdivisions

01-04 (Biophysics, biochemistry, control processes, tissue and organ culture, physiology of specific activities)

1 Blood and circulation

2 Respiration

3 Digestion

4 Hematopoietic, lymphatic, glandular, urinary systems

6 Reproduction, development, maturation

7 Musculoskeletal system, integument

8 Nervous system, Sensory functions

9 Regional physiology

613 Personal health and safety

04 Personal health of specific sex and age groups

1 Environmental factors

2	Dietetics
4	Personal cleanliness and related topics
5	Artificial environments
6	Personal safety and special topics of health
7	Physical fitness
8	Substance abuse (Drug abuse)
9	Birth control, reproductive technology, sex hygiene
614	Forensic medicine: incidence of injuries, wounds, disease: public preventive medicine
1	Forensic medicine
3	Incidence of Injuries and wounds
4	Incidence of and public measures to prevent disease
5	Incidence of and public measures to prevent specific diseases and kinds of diseases
6	Disposal of the dead
615	Pharmacology and therapeutics
1	Drugs (Materia medica)
2	Inorganic drugs
3	Organic drugs
4	Prescription filling
5	Therapeutics
6	Methods of administering drugs
7	Pharmacokinetics
8	Specific therapies and kinds of therapies
9	Toxicology
616	Diseases
001-009	Standard subdivisions
02-09	(General topics of diseases)
1	Diseases of cardiovascular system
2	Diseases of respiratory system
3	Diseases of digestive system



- 4 Diseases of hematopoietic, lymphatic, glandular systems, Diseases of endocrine system
- 5 Diseases of integument
- 6 Diseases of urogenital system, Diseases of urinary system
- 7 Diseases of musculoskeletal system
- 8 Diseases of nervous system and mental disorders
- 9 Other diseases
- 617 Miscellaneous branches of medicine surgery
- 001-008 Standard subdivisions of surgery
- 02-09 (General topics of surgery and historical, geographic, persons treatment)
- 1 Injuries and wounds
- 2 Results of injuries and wounds
- 4 Surgery and systems
- 5 Regional medicine, Regional Surgery
- 6 Dentistry
- 7 Ophthalmology
- 8 Otology and audiology
- 9 Operative surgery and special fields of surgery
- 618 Other branches of medicine, Gynecology and obstetrics
- 01-09 Standard subdivisions and special topics of gynecology and obstetrics
- 1 Gynecology
- 2 Obstetrics
- 3 Diseases and complication of pregnancy
- 4 Childbirth Labor
- 5 Labor complication
- 6 Normal puerperium
- 7 Puerperal diseases
- 8 Obstetrical surgery
- 9 Pediatrics and geriatrics

## **LIBRARY OF CONGRESS CLASSIFICATION SCHEME (LC)**

Library of Congress Classification Scheme (LC) was developed out of desire to fashion out a scheme that will be peculiar and adequate suit the collection of the library of congress in the United States of America. It is a scheme rooted in literary warrant i.e. the existing collections of the library of congress. The scheme divided the entire spectrum of knowledge into 26 classes in the scheme are published in separate schedules. These classes are designated with symbols or notation by letters of Alphabets A-Z, without letters I, O, W, X, Y and Arabic numerals; this is referred to as mixed notation. Each class schedule has a synopsis that provides guidance to classifiers. The scheme also starts from general knowledge to the specific and theoretical aspect to practical aspects of subjects.

From the outlines, library of Congress uses letter to denote the main class mark for medicine “R” double capital letters for sub-division, Arabic numerals for further divisions and cutter numbers for specificity.

The outline of the schedule for Medicine is provided below:

### **Class R-Medicine [edit]**

- Subclass R – Medicine (General)
- Subclass RA – Public aspects of medicine
- Subclass RB – Pathology
- Subclass RC – Internal medicine
- Subclass RD – Surgery
- Subclass RE – Ophthalmology
- Subclass RF – Otorhinolaryngology
- Subclass RG – Gynecology and Obstetrics
- Subclass RJ – Pediatrics
- Subclass RK – Dentistry
- Subclass RL – Dermatology
- Subclass RM – Therapeutics. Pharmacology
- Subclass RS – Pharmacy and material media
- Subclass RT – Nursing
- Subclass RV – Botanic, Thomsonia and Eclectic medicine
- Subclass RX – Homeopathy
- Subclass RZ – Other systems of medicine

## CONCLUSIONS

The roles of Cataloguing and Classification Scheme in effective organization of Medical Library collections are crucial. They are the basis of class numbers of information sources that form essential component of bibliographic data facilitate access to the collection of a medical library in addition, Cataloguing and Classification facilitate:

- Shelf arrangement of information sources in helpful manner. This saves the users' time in search for right resources in medical library collections.
- Subject analysis of medical information sources and their mechanized arrangement by the use of notation.
- Optimum use of collection of medical libraries resources by bringing users into contact with specific resources or pieces of information required.
- Collation of information sources on related subjects. This permits in-depth searching of information sources on discipline

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